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| 10/088,888 | 07/29/2002 | Paul Eirich | WSP:205 US | 4995 |

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| EXAMINER |
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COOLEY, CHARLES E

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| ART UNIT | PAPER NUMBER |
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1723

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,888

Applicant(s)

EIRICH ET AL.

Examiner

Charles E. Cooley

Art Unit

1723

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-35 and 37-45 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08122002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d). All of the CERTIFIED copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 12 AUG 2002 has been considered by the examiner.

Drawings

3. The drawings are objected to under 37 CFR § 1.83(a) since the drawings must show every feature of the invention specified in the claims. Therefore, the following features must be shown or the features canceled from the claims. No new matter should be entered.
 - a. The mixing agitator (claims 39-41).
 - b. The removing means (claim 39)
 - c. The subject matter of claim 41.
 - d. The subject matter of claim 42.
 - e. The subject matter of claim 43.
 - f. The subject matter of claim 44.
 - g. The subject matter of claim 45.

4. The drawings are objected to because:
- a. The reasons set forth on the attached PTO-948 form.
 - b. The drawing figure does not comply with 37 CFR 1.84(u): **Numbering of views:**

The different views must be numbered in consecutive Arabic numerals, starting with 1, independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheet(s). Partial views intended to form one complete view, on one or several sheets, must be identified by the same number followed by a capital letter. View numbers must be preceded by the abbreviation "FIG." Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation "FIG." must not appear.

Correction is required.

5. Applicant should verify that (1) all reference characters in the drawings are described in the detailed description portion of the specification and (2) all reference characters mentioned in the specification are included in the appropriate drawing Figure(s) as required by 37 CFR 1.84(p)(5).
6. 37 CFR 1.121 (d) requires that any drawing changes be submitted in compliance with 37 CFR 1.84 on replacement sheets as an attachment to an amendment document. An accompanying detailed explanation of all of the changes should be provided on a separate sheet in the drawing amendments or remarks section of the amendment document. A marked-up copy of one or more of the figures being amended, with annotations, may also be included to provide further explanation of the changes made. The marked-up version must be labeled as "Annotated marked-up Drawings." Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of an amended drawing should not be labeled as

"amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per Sec. 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. No further drawing submission of the amended drawing figure(s) by applicant would be required, unless applicant is so notified.

Specification

7. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

8. The disclosure is objected to because of the following informalities:

a. The specification should have the following headings inserted therein at the appropriate locations in accordance with 37 CFR 1.77:

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the title of the invention, each of the lettered items should be preceded by the headings indicated below.

- (a) Title of the Invention.
- (b) Cross-References to Related Applications (if any).
- (c) Statement as to rights to inventions made under Federally-sponsored research and development (if any).
- (d) Background of the invention.

1. Field of the Invention.
2. Description of the Related Art including information disclosed under 37 C.F.R. §§ 1.97-1.99.
- (e) Summary of the Invention.
- (f) Brief Description of the Drawing.
- (g) Description of the Preferred Embodiment(s).
- (h) Claim(s).
- (l) Abstract of the Disclosure.

Appropriate correction is required.

9. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
10. The title is acceptable.
11. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 C.F.R. § 1.75(d)(1) and M.P.E.P. § 608.01(I).

Correction of the following is required:

- a. the sealing means (claim 39).
- b. the rotating mixing container (claim 43).
- c. the baffle (claim 43) – considered equivalent to the material deflector of canceled claim 22.

Inventorship

12. Receipt is acknowledged of the statement requesting that Herbert Durr be deleted as a named inventor that was filed with this application. The inventorship has been corrected as requested.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 39, 40, 41, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Palm (US 5,284,085).

The patent to Palm discloses an agitator 9; vacuum sealed container 1; vacuum producing means 14; feed means (col. 4, lines 63-67); discharge means (col. 5, lines 30-33); supply means for injecting materials into the container including the agitator 9 and apertures 10 in the agitator; the container 1 does not rotate and the container having orifices 5, 7 through the wall of the container 1 and/or the vertical conduits disposed through the wall of the container 1 and into the container located proximate 15a and 2 in Fig. 1.

15. Claims 39, 43, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham (US 3,521,863).

The patent to Graham discloses an agitator/wall scraper assembly 25, 38, 39, 41; vacuum sealed container 16; vacuum producing means 47; feed means 51a-51d; discharge means 53; supply means for injecting materials into the container including a conduit 61; the container 16 being rotatable; the conduit 61 being provided in the agitator/wall scraper assembly.

16. Claims 39, 43, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Peacock (US 5,603,567).

The patent to Peacock discloses an agitator (vanes – col. 4, lines 26-30); vacuum sealed container 12; vacuum producing means 28; feed and discharge means 24; supply means for injecting materials into the container including a conduit 78; the container 12 being rotatable; the conduit 61 being provided in a baffle 42.

17. Claims 39, 43, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Mack (US 2,628,080).

The patent to Mack discloses an agitator/mixer container 10, 12; the container being vacuum sealed; vacuum producing means 60; feed means 16; discharge means 20; supply means for injecting materials into the container including a conduit 64; the container 10, 12 being rotatable; the conduit 64 being provided in a baffle 56.

18. Claims 39, 40, 41, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by McILVAINE (US 2,593,327).

The patent to McILVAINE discloses an agitator assembly 10, 11; vacuum sealed container 12; vacuum producing means 58; feed means 53; discharge means 45; supply means for injecting materials into the container including the agitator assembly 10, 11 and apertures 10b, 10c in the agitator; the container 12 does not rotate and the container having orifices 52, 56, 61 through the wall of the container 12.

19. Claims 23, 25, 26, 31, 39, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Suginaka et al. (US 5,816,312).

The patent to Suginaka et al. discloses a container 1 with an agitator therein (Fig. 2); the container 1 being vacuum sealed; vacuum producing means 23; feed means 2; discharge means 1a; supply means 10 for injecting materials into the container including a conduit (below 19); the container 1 being rotatable. The claimed method for conditioning molding sand is disclosed at col. 6, line 34 through col. 7, line 10. The water feeding steps are further disclosed at col. 5, lines 15-35. The production of a vacuum in the container 1 is further disclosed at col. 5, lines 36-46.

20. Claims 23, 25, 26, 31, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kruse (US 5,915,833).

The patent to Kruse discloses a container 5 with an agitator 8 therein; the container 5 being vacuum sealed; vacuum producing means 16; feed means 3, 9; discharge means 22; supply means 12 for injecting materials into the container. The claimed method for conditioning molding sand is disclosed at col. 1, line 50 through col. 2, line 65.

21. Claims 23, 25, 26, 31, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2066683.

GB 2066683 discloses a container 1 with an agitator 15, 16a therein; the container 1 being vacuum sealed; vacuum producing means 25; feed means 3, 7; discharge means 8; supply means 20 for injecting materials into the container. The claimed method for conditioning molding sand is disclosed at page 3, lines 84-113.

22. Claims 23, 25, 26, 27, 29, 30, 31, 33, 34, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Christensen et al.

The patent to Christensen et al. discloses the claimed method for conditioning molding sand at col. 6, line 57 through col. 7, line 74. The heating of the sand is further described at col. 4, line 58 through col. 5, line 7. The production of a vacuum in the container is further described at col. 5, lines 64-70. The addition of water to the heated sand is further described at col. 6, lines 11-20 and col. 8, lines 27-36. The subject matter of claim 38 is met by col. 3, lines 51-67; col. 5, lines 8-11; and col. 7, lines 24-36 as cooled sand discharged from unit 4 is gradually added to hot sand present in the unit 17.

23. Claims 23, 25, 26, 27, 29, 30, 31, 32, 33, 34, 37, 39, 40, 43, 44, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Brunner et al. (US 3,690,622).

The patent to Brunner discloses a container 23 or 48 (Figs. 2-5 and 11); an agitator 34 or 136, 169 in the container; the container being vacuum sealed; vacuum producing means 83; feed means 75; discharge means 52; supply means for injecting materials into the container including element 169 of the agitator; the container 23 or 48 being rotatable; a conduit is provided in the wall scraper 62 and the baffle 61 for supplying materials to the container or a tubular lance may be provided (col. 6, lines 3-10). The claimed method for conditioning molding sand is disclosed at col. 10, lines 31-63. The materials processed in the container of Brunner et al. can be heated by hot air or hot water vapor (col. 6, lines 3-10 and lines 42-46; col. 12, lines 1-5). The hot air or hot water vapor is supplied to the container below the surface of the materials being processed (col. 11, lines 57-59).

Art Unit: 1723

24. Claims 23, 24, 25, 26, 27, 31, 39, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Leidel (US 4,709,862).

The patent to Leidel discloses a container 50; an agitator 70 in the container; the container being vacuum sealed; vacuum producing means 36; feed means 18; discharge means 56; supply means for injecting materials into the container including a conduit 76a, 76b, or 78; the container 50 being rotatable. The claimed method for conditioning molding sand is disclosed at col. 3, lines 29-53 and col. 7, line 56 through col. 9, line 6. Also note claims 1, 3, 5, and 9.

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

27. Claims 28, 30, 33, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leidel (US 4,709,862) in view of Campbell (US 5,626,421).

Leidel (US 4,709,862) discloses the method steps substantially as claimed as referenced above including the heating of the molding sand via hot air/gases but does not disclose the heating via other heat exchange mediums such as hot water or hot water vapor. The patent to Campbell discloses a mixer having a mixer container 25 with an agitator 68, 69 therein wherein the mixer is supplied with a heat exchange medium. The medium may take the form of well known heat exchange medium equivalents such as hot water, steam, or gas. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the step of heating the sand with hot air/gases in Leidel '862 with heating of the sand via other well known art recognized heat exchange mediums such as hot water or hot water vapor as taught by Campbell for the purpose of controlling the temperature of the mixer and contents of the mixer to a desired temperature (col. 4, lines 46-49).

Allowable Subject Matter

28. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited prior art discloses vacuum mixers, mixers with injecting means for supplying materials to the interior of the container, and disclosures drawn to the processing of molding sand.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles E. Cooley
Primary Examiner
Art Unit 1723

17 March 2004